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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,295	08/20/2003	Sanjay Gupta	END920030025	6666
7590 Andrew M. Calderon Greenblum and Bernstein P.L.C. 1950 Roland Clarke Place Reston, VA 20191	12/07/2007		EXAMINER RAYYAN, SUSAN F	
			ART UNIT 2167	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

m7

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/644,295	GUPTA, SANJAY
	Examiner	Art Unit
	Susan F. Rayyan	2167

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 13 November 2007.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1,3-7,10-13,16-18,20-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1,3-7,10-13,16-18 and 20-25 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____

## DETAILED ACTION

1. Claims 1, 3-7, 10-13, 16-18, 20-25 are pending. Claims 2, 8-9, 14-15, 26-29 are canceled.

### Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. **Claims 1,3-7,10-13,16-18,20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shakib et al (US 5,752,025) and Yoshiyama et al (US 200210120617) and US 2001100156428 issued to Kimberly Lynn Gajda et al (Gajda") and Wilkes et al (US 2003,0088739).**

As per claim 1 Shakib teaches:

sorting and categorizing a first set of columns within a view of the database at co1.3, lines 65, bridging to, co1.4, line 3 and Figure 5 (database view); and the second set of columns is visible as collapsed data (column 8, lines 16-30, user view attribute column indicates row which are not visible and collapsed).

Shakib does not explicitly teach marking a second set of columns within the view as if the second set of columns were already sorted and categorized prior to actual sorting and categorizing of the second set of columns, the second set of columns including all columns exclusive of the first set of columns and sorting and categorizing at least one column of the second set of columns in response to performing a query on the at least one column .... Yoshiyama does teach this limitation at (parg. 35 lines 6-15, determining whether an index satisfies retrieval conditions. If an index does not exist which satisfies the retrieval conditions a new index is generated. Any column which was not indexed is defacto marked as being indexed. Yoshiyama teaches an index. The columns which were not indexed is the marking the second set of columns. When the retrieval conditions are not met after a comparison of the index a new index is generated) and sorting and categorizing at least one column of the second set of columns in response to performing a query on the at least one column (at parg. 35) to speed up data retrieval. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Shakib with marking a second set of columns within the view as if the second set of columns were already sorted and categorized prior to actual sorting and categorizing of the second set of columns, the second set of columns including all columns exclusive of the first set of columns and sorting and categorizing at least one column of the second set of columns in response to performing a query on the at least one column .... speed up data retrieval as described by Yoshiyama (parg. 10).

Shakib teaches a database. Shakib and Yoshiyama do not explicitly teach a non-

relational database. Gajda does teach a non-relational database (at paragraph 2, line3 ) as an important tool for storage and management of information for businesses. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Shakib and Yoshiyama with a non-relational database for storage and management of information for businesses (paragraph 2, lines 1-2).

Shakib and Yoshiyama and Gajda do not explicitly teach ... assigning the first set of columns to a portion of a cache and ... in another portion of the cache Wilkes does teach this limitation at parg. 62, 64 and fig. 2. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the cited references to improve the rate at which the insertion point in the cache metadata structure may be found at parg. 65, lines 1-3.

**As per claim 3** same as claim arguments above and Yoshiyama teaches: including establishing a mini-index indexing the at least one column of the second set of columns at parg. 46, lines 11-17 (new index).

**As per claim 4** same as claim arguments above and Yoshiyama teaches: including accessing the mini-index to provide increased performance at parg. 46, lines 11-17 (new index).

**As per claim 5** same as claim arguments above and Yoshiyama teaches : including monitoring parameters of the mini-index, and as a result, performing one of deleting, updating, and recreating the mini-index at parg. 46, lines 11-17.

**As per claim 6** same as claim arguments above and Yoshiyama teaches:

wherein the parameters include at least one of a number of sorted columns, a number of categorized columns, a number of records that can be accessed in a view, an average number of records per category, and an average number of records per hierarchy at parg. 46, lines 15-17.

**As per claim 7 Shakib** teaches:

sorting and categorizing a first set of columns within a view of the ... database at col.3, lines 65, bridging to, co1.4, line 3, Figure 5, database view); and the second set of columns is visible as collapsed data (column 8, lines 16-30, user view attribute column indicates row which are not visible and collapsed).

Shakib does not explicitly teach marking a second set of columns within the view as if the second set of columns were already sorted and categorized prior to actual sorting and categorizing of the second set of columns, the second set of columns including all columns exclusive of the first set of columns and sorting and categorizing at least one column of the second set of columns in response to performing a query on the at least one column... Yoshiyama does teach this limitation (at parg. 35 lines 6-15 determining whether an index satisfies retrieval conditions. If an index does not exist which satisfies the retrieval conditions a new index is generated. Any column which was not indexed is defacto marked as being indexed. Yoshiyama teaches an index. The columns which were not indexed is the marking the second set of columns. When the retrieval conditions are not met after a comparison of the index a new index is

generated) and sorting and categorizing at least one column of the second set of columns in response to performing a query on the at least one column ... (at parg. 35, determining whether an index satisfies retrieval conditions. If an index does not exist which satisfies the retrieval conditions a new index is generated) to speed up data retrieval at parg. 10. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Shakib with teach marking a second set of columns within the view as if the second set of columns were already sorted and categorized prior to actual sorting and categorizing of the second set of columns, the second set of columns including all columns exclusive of the first set of columns and sorting and categorizing at least one column of the second set of columns in response to performing a query on the at least one column... to speed up data retrieval as described by Yoshiyama (at parg. 10).

Shakib teaches a database. Shakib and Yoshiyama do not explicitly teach a non-relational database. Gajda does teach a non-relational database at paragraph 2, line3 as an important tool for storage and management of information for businesses. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Shakib and Yoshiyama with a non-relational database for storage and management of information for businesses (paragraph 2, lines 1-2).

Shakib and Yoshiyama and Gajda do not explicitly teach ... including maintaining the first set of columns in a portion of cache and ... including maintaining the at least one column of the second set of columns in another portion of cache Wilkes does teach this limitation at parg. 62, 64 and fig. 2. It would have been obvious to one of ordinary skill in

the art at the time of the invention to combine the cited references to improve the rate at which the insertion point in the cache metadata structure may be found at parg. 65.

**As per claim 10** same as claim arguments above and Yoshiyama teaches:  
establishing a mini-index indexing the at least one column of the second set of columns at parg. 46, lines 11-17 (new index).

**As per claim 11** same as claim arguments above and Yoshiyama teaches:  
including accessing the mini-index to provide increased performance at parg 46, lines 11-17 (new index).

**As per claim 12** same as claim arguments above and Yoshiyama teaches:  
including monitoring parameters of the mini-index, and as a result, performing one of deleting, updating, and recreating the mini-index at parg. 46, lines 11-17.

**As per claim 13** same as claim arguments above and Yoshiyama teaches:  
wherein the parameters include at least one of a number of sorted columns, a number of categorized columns, a number of records that can be accessed in a view, an average number of records per category, and an average number of records per hierarchy at parg. 46, lines 15-17.

**As per claim 16** same as claim arguments above and Wilkes teaches:  
... further including sizing the portion of cache depending on the size of the at least one column of the second set of columns. Wilkes does teach this limitation at parg. 62, 64 and fig. 2.

**As per claim 17**, same as claim arguments above and Shakib teaches:

... permits clients to see the second set of columns and to issue a query on the at least one column of the second set of columns (at column 3, lines 43-49, remaining set of fields are used for viewing and sorting and column 4, line 1, indexes are created based upon user demand).

**Claim 18** is rejected based on the same rationale as claim 1 and Wilkes teaches ...

including a component to sort and categorize the at least one column of the second set in a portion of a cache and assign the first set of columns to another portion of the cache. Wilkes does teach this limitation at parg. 62, 64 and fig. 2

**As per claim 20** same as claim arguments above and Yoshiyama teaches:

establishing a mini-index indexing the at least one column of the second set of columns at parg. 46, lines 11-17.

**As per claim 21**, same as claim arguments above and Shakib teaches;

Including a component to access the mini-index by a server ( column 4, lines 42-49).

**As per claim 22** same as claim arguments above and Yoshiyama teaches:

monitor parameters of the mini-index, and as a result, performing one of deleting, updating, and recreating the mini-index at parg. 46, lines 11-17.

**As per claim 23** same as claim arguments above and Yoshiyama teaches:

wherein the parameters include at least one of a number of sorted columns, a number of categorized columns, a number of records that can be accessed in a view, an average number of records per category, and an average number of records per hierarchy at parg. 46, lines 15-17.

**As per claim 24, same as claim arguments above and Shakib teaches:**

... permits clients to see the second set of columns and to issue a query on the at least one column of the second set of columns (at column 3, lines 43-49, remaining set of fields are used for viewing and sorting and column 4, line 1, indexes are created based upon user demand).

**Claim 25** is rejected based on the same rationale as claim 1.

***Response to Arguments***

4. Applicant's arguments, see page 19, (vi) of the After Final, filed November 13, 2007, with respect to the rejection(s) of claim(s) 1,3-7,10-13,16-18,20-25 under 35 U.S.C. 103(a) as being unpatentable over Shakib et al (US 5,752,025) and Yoshiyama et al (US 200210120617) and US 2001100156428 issued to Kimberly Lynn Gajda et al (Gajda") and Wilkes et al (US 2003,0088739) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of a different interpretation of a previously applied reference.

5. Applicant argues no proper combination of the applied references discloses or suggests marking a second set of columns within the view as if the second set of columns were already sorted and categorized prior to actual sorting and categorizing the second set of columns. Examiner finds Yoshiyama does teach this limitation similar to the Applicant's claim language. Yoshiyama at paragraph 35, lines 6-15 teaches an

index and determining whether an index satisfies retrieval conditions. If an index does not exist which satisfies the retrieval conditions a new index is generated. Those columns not indexed is similar to marking a second set of columns.

6. Applicant argues Yoshiyama does not "mention marking a second set of columns within a view of a database as if the second set of columns were already sorted and categorized prior to actual sorting and categorizing the second set of columns. As required by the claimed invention and indeed the terms "marking" and "view" are nowhere to be found in the noted passages." Applicant argues "Yoshiyama does not explicitly teach a view of the database". Examiner finds Shakib teaches database view at Figure 5. Yoshiyama at paragraph 35, lines 6-15 teaches "marking a second set of columns within a view of a database as if the second set of columns were already sorted and categorized prior to actual sorting and categorizing the second set of columns..." as determining whether an index satisfies retrieval conditions. If an index does not exist which satisfies the retrieval conditions a new index is generated. Any column which was not indexed is defacto marked as being indexed.

7. Applicant argues "in the Response to Arguments section the Final Office Action , the Examiner asserts that "not indexing " is similar to marking and/or not indexing" is marking by default, and that Yoshiyama therefore teaches the recited marking.". Applicant argues that Yoshiyama's "not indexing" is not inherent. Yoshiyama at paragraph 35, lines 6-15 teaches "marking a second set of columns within a view of a database as if the second set of columns were already sorted and categorized prior to

actual sorting and categorizing the second set of columns" as determining whether an index satisfies retrieval conditions. If an index does not exist which satisfies the retrieval conditions a new index is generated. Any column which was not indexed is defacto marked as being indexed. Yoshiyama teaches an index. The columns which were not indexed is the marking the second set of columns. When the retrieval conditions are not met after a comparison of the index a new index is generated.

8. Applicant argues "the rejection is improper because it does not address the language of the claims, and because it is conclusory. Applicant argues the Examiner's explanation does not address the actual claim language of the claims." Specifically, the explanation fails to consider or address "marking as if the second set of columns were already sorted and categorized prior to actual sorting and categorizing. Examiner provided a response to the Applicants' arguments in the Final Office Action dated September 11, 2007 on page 2, lines 3-15.

9. Applicant argues the rejection is improper because it is conclusory and does not set forth articulated reasoning to support the holding of obviousness. Applicant indicates that the Final Office action (page 2, 5) with regard to marking a second set of columns within the view as if the second set of columns were already sorted and categorized prior to actual sorting and categorizing the second set of columns are unsupported assertions of inherency. . Yoshiyama at paragraph 35, lines 6-15 teaches

"marking a second set of columns within a view of a database as if the second set of columns were already sorted and categorized prior to actual sorting and categorizing the second set of columns" as determining whether an index satisfies retrieval conditions. If an index does not exist which satisfies the retrieval conditions a new index is generated. Any column which was not indexed is defacto marked as being indexed. Yoshiyama teaches an index. The columns which were not indexed is the marking the second set of columns. When the retrieval conditions are not met after a comparison of the index a new index is generated.

10. Applicant argues the there is no motivation to combine the references (Shakib and Yoshiyama). In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Shakib teaches sorting and categorizing a first set of columns within a view of the database at col./3, lines 65, bridging to, col.4, line 3 and Figure 5 (database view) and the second set of columns is visible as collapsed data (column 8, lines 16-30, user view attribute column indicates row which are not visible and collapsed). Shakib does not

explicitly teach marking a second set of columns within the view as if the second set of columns were already sorted and categorized prior to actual sorting and categorizing of the second set of columns, the second set of columns including all columns exclusive of the first set of columns and sorting and categorizing at least one column of the second set of columns in response to performing a query on the at least one column ....

Yoshiyama does teach this limitation (at parg. 35 lines 6-15, index, as any column not indexed is similar to the marked as being indexed) to speed up data retrieval at parg 10 and sorting and categorizing at least one column of the second set of columns in response to performing a query on the at least one column) to speed up data retrieval. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Shakib with marking a second set of columns within the view as if the second set of columns were already sorted and categorized prior to actual sorting and categorizing of the second set of columns, the second set of columns including all columns exclusive of the first set of columns and sorting and categorizing at least one column of the second set of columns in response to performing a query on the at least one column ....to speed up data retrieval as described by Yoshiyama (at parg. 10).

11. Applicant argues there is not reasonable expectation of success regarding Shakib and Yoshiyama. Both Shakib and Yoshiyama are in the same area of art. Shakib discloses a categorization table and sorting using an index. Yoshiyama discloses an index and generating additional index if retrieval condition are not met. One skilled in

the art at the time the invention was made would have had a reasonable expectation of success regarding combining Yoshiyama with Shakib.

12. Applicant argues the proposed modification of Shakib in view of Gajda is improper and has no reasonable expectation of success. Shakib and Yoshiyama. Both Shakib and Yoshiyama are in the same area of art. Shakib discloses a categorization table and sorting using an index. Yoshiyama discloses an index and generating additional index if retrieval condition are not met. One skilled in the art at the time the invention was made would have had a reasonable expectation of success regarding combining Yoshiyama with Shakib. Gajda is in the same area of art as both Shakib and Yoshiyama. Gajda discloses both relational and non-relational databases and an index manager at paragraph 26 and Figure 10. One skilled in the art at the time the invention was made would have had a reasonable expectation of success with regard to combining the non-relational database with Shakib and Yoshiyama.

13. Applicant argues prior art of record does not teach the second set of columns is visible as collapsed data. Examiner agrees with Applicant that Yoshiyama does not teach the second set of columns are visible as collapsed data. However, upon further consideration, Shakib does teach this at column 8, lines 16-30, as user view attribute column indicates row which are not visible and are collapsed.

### Contact Information

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan F. Rayyan whose telephone number is 571-272-1675. The examiner can normally be reached on M-F, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on 571-272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Susan Rayyan  
December 5, 2007



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